The Silent Convergence Toward Race Pace Training

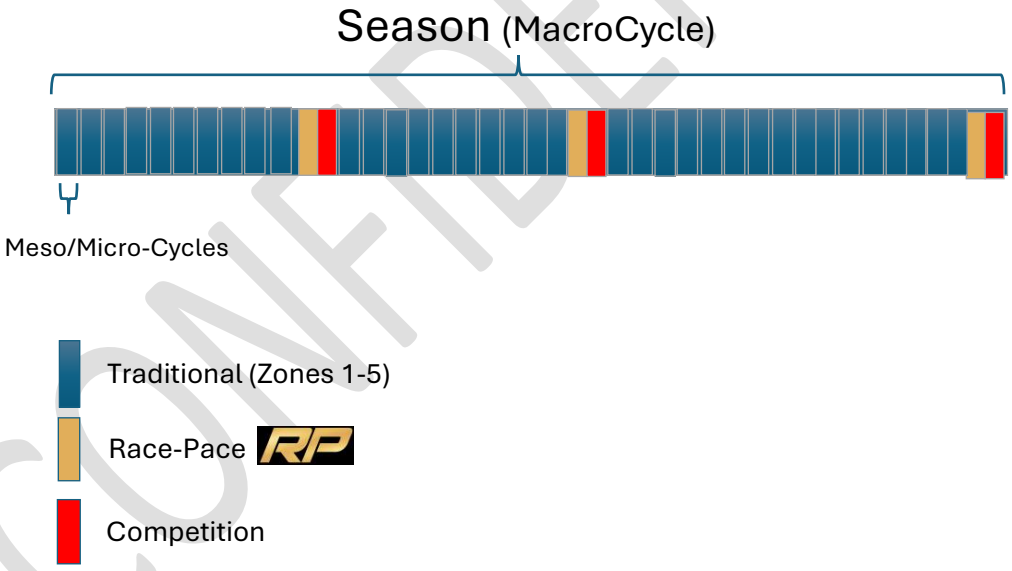
An Undeclared Transition

In recent years, a growing number of high-performance coaches and swimmers have begun to move away—often selectively—from traditional models characterized by *large aerobic volumes*, sequential phase structures within *periodization* built on the flawed assumption that isolated energy systems can be developed independently, and *the use of indirect physiological markers* as drivers of performance.

As discussed throughout this book, lactate, VO_2max, or heart rate tell the story of metabolic processes within the body. Not performance.

Broadly speaking, a traditional season would consist of several phases lasting months (mesocycles) or weeks and days (microcycles), during which nearly all training would follow traditional methods.

Race-pace work would usually appear only during the taper period before major competitions, accompanied by dives and turns.



Typical Structure of a Traditional Season

This traditional model originated in the Soviet Union and the GDR during the 1970s, where athletes endured grueling training systems reinforced by state-sponsored doping programs.

The regimes disappeared, hopefully together with the doping practices. The model did not.

And yet, some coaches are now achieving better results by moving away from this traditional paradigm.

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However, this transition has not been presented as an explicit paradigm shift.
Instead, it has emerged as a practical evolution driven by coaching experience rather than systematic engagement with existing scientific literature.

The result is a noteworthy phenomenon:

A gradual convergence toward principles that Brent Rushall had already formalized decades earlier through the USRPT methodology and its central concept: **Race Pace Training.**

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A Practical Example: Ben Titley

A representative example of this trend can be observed in the training philosophy of coach **Ben Titley** as shown in Swimming World Magazine, August 2022.

Following periods of rest, **Titley** emphasizes the need to reintroduce athletes to race-relevant movement patterns through high-intensity, technically focused work:

"*The brain and body need to be reintroduced to the correct patterns and movements […]*
For 'most' athletes, that means… technique-focused, high-intensity, race-specific swimming"

He proposes a progression from short distances toward race-specific demands:

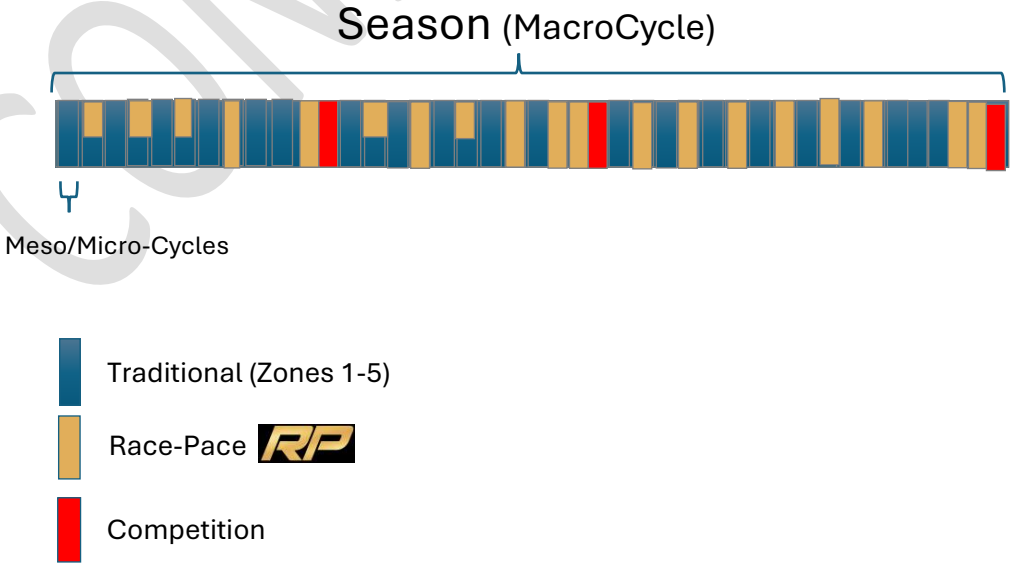
"*Week 1… 15-meter repeats… Week 5, 50-meter repeats*"

Titley further highlights the importance of training in a fresh state:

> "*the body is freshest and most recovered, and should be able to produce its greatest amount of power and force […] likely to be able to perform with the best technique […] and the greatest willingness to learn new skills—without fatigue holding it back*"

He also notes that:

> "*speed/power work continues throughout the season… almost every session*" …
> "*The athlete is never too far away from being able to swim fast*"



Typical Structure of a Ben Titley Training Season

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Titley's training structure offers another example of this convergence, as discussed in his interview with Brett Hawke in Ben Titley, architect of Canadian Swimming

Although not presented as USRPT, many of its underlying principles progressively move toward a race-specific organization of training: repeated exposure to **race pace**, highly individualized programming, neuromuscular emphasis, and fatigue management aimed at preserving execution quality rather than accumulating exhaustion.

Particularly revealing is the fact that athletes such as **Summer McIntosh** reportedly perform thousands of meters of **race-pace** work within a single session.

Although an intention to innovate by some swimming coaches, such as **Ben Titley**, is commendable, **these efforts often result in only partial departures from traditional training models**.

In many cases, these approaches move closer to race-relevant practices by:

- Introducing speed and technique earlier in the cycle
- Maintaining frequent exposure to race-specific velocities
- Emphasizing technical execution under controlled conditions
- Prioritizing neuromuscular quality

This represents a clear shift toward principles consistent with **Race Pace training**. However, this convergence remains incomplete.

These same models continue to retain key structural elements of traditional swimming methodology, including:

- Periodized macrocycles
- Aerobic conditioning phases
- Multiple and often conflicting training objectives

More importantly, they preserve the underlying conceptual framework in which performance is approached indirectly through the manipulation of physiological markers.

Training, therefore, remains partially oriented toward improving variables such as:

- Aerobic capacity
- Lactate production and clearance
- Metabolic thresholds

rather than directly targeting race execution itself.

As a result, we are not dealing with anything new, but with a reformulation of the traditional approach that incorporates isolated elements of the alternative (USRPT).

However, when these elements are embedded within traditional structures, their full potential cannot be realized.

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The Cameron McEvoy Case: From Partial Convergence to Structural Break

A particularly revealing case is that of swimmer **Cameron McEvoy**, who abandoned the traditional training model he had followed throughout his career to adopt a radically different approach.

As discussed in the chapter *Copying Successful Swimmers*, **McEvoy's** innovative approach *was a huge act of creation and a risk (reuters.com).*

… instead of clocking up 30–70 kilometres a week, McEvoy is now maxing out at 2–3 kilometres (swimming.org.au)

Following this shift:

- He returned to elite performance
- He extended his competitive longevity
- He achieved world-class results at 31 years of age

What makes this case particularly relevant is not simply its originality, but its underlying structure.

Many of the elements introduced by **McEvoy** and his coach **Tim Lane**—whether derived from cross-disciplinary borrowing, or iterative trial-and-error—align closely with principles already defined within the USRPT framework, despite not being explicitly recognized as such.

Consequently, previously established principles are often independently rediscovered and presented as new.

These include:

- prioritization of race-specific intensity and reduction of non-specific volume.
- emphasis on neuromuscular quality over metabolic accumulation.
- continuous exposure to race-relevant speeds.
- management of fatigue to preserve execution quality.

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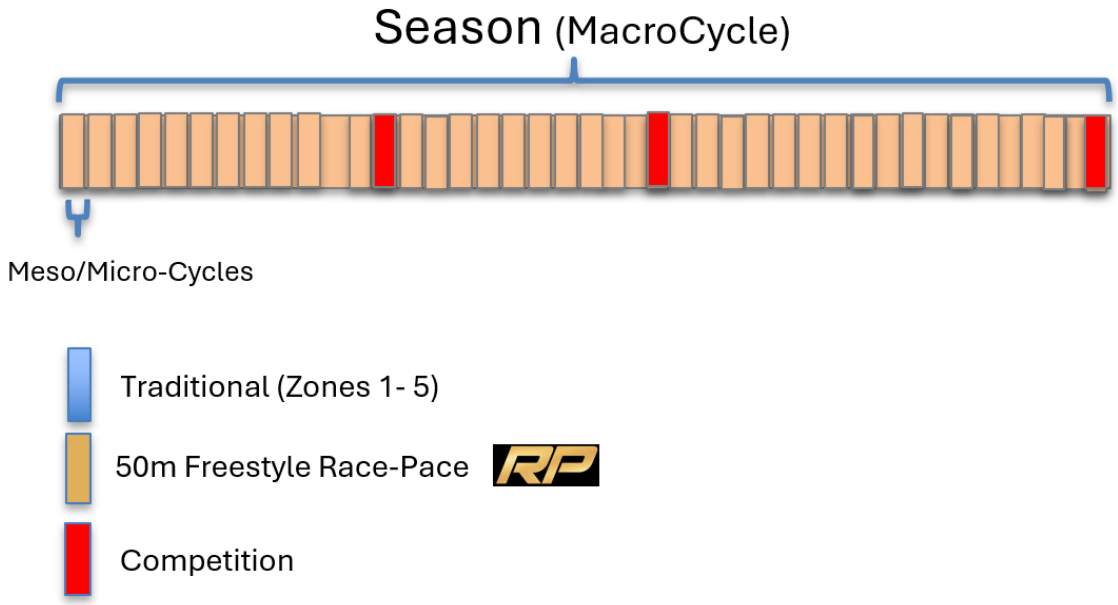


Typical Structure of a McEvoy/Lane 50m Freestyle Season

Regarding resistance training, **McEvoy**'s approach is strongly oriented toward what Rushall described as "drop-dead" sprinters (e.g., 50m events), placing a greater emphasis on explosive strength development specific to sprint performance.

By contrast, the USRPT framework adopts a broader race-pace structure designed for swimmers across all events.

These unrecognized resemblances highlight a broader and often overlooked phenomenon in swimming science—one discussed throughout this book: scientific advances are frequently ignored, leading practitioners to rediscover what has already been established.

In many cases, practitioners:

- identify limitations in existing systems
- begin to experiment
- progressively move toward more effective solutions

Yet, without awareness of prior work, this process often leads to the **rediscovery of principles that have already been defined, tested, and published**.

This pattern is not limited to individual cases but is also reflected in broader attempts to redefine training models.

Brett Hawke's "Sprint Revolution": Reframing Existing Principles

Brett Hawke's "Sprint Revolution" represents another example of the growing shift away from traditional high-volume swimming models toward approaches centered on speed, specificity, and sprint performance.

His framework places particular emphasis on:

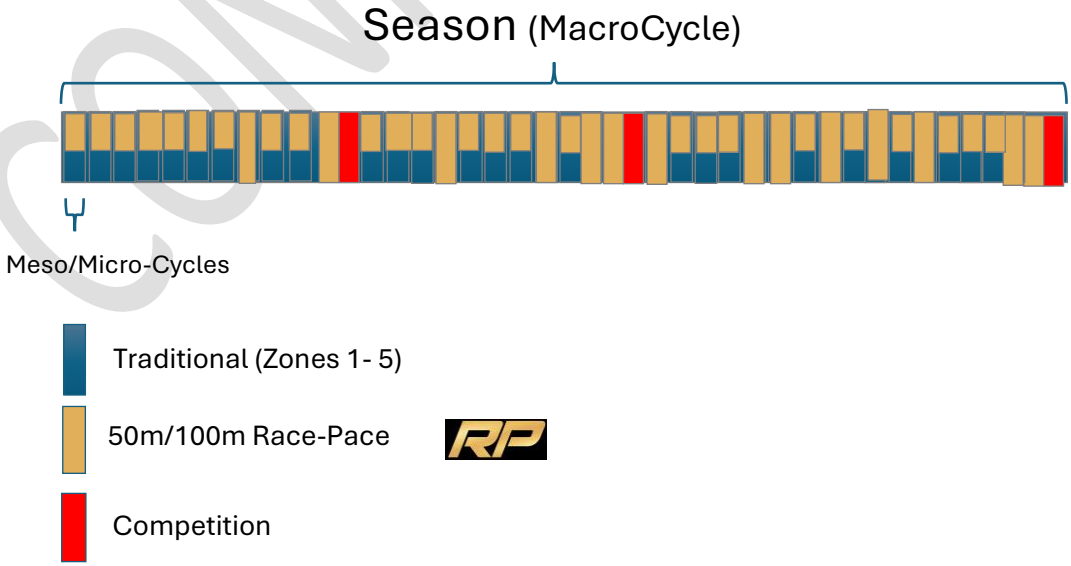
- race-specific speed development
- explosive power and resistance training
- technical precision under fatigue
- sprint-oriented race segmentation
- recovery management
- and psychological preparation for sprint racing

Unlike traditional models in which sprint work appears mainly during taper periods, Hawke promotes regular exposure to high-speed efforts throughout the training process.

This represents a clear shift toward principles consistent with Race Pace Training for 50 and 100 sprint events.

However, the model still incorporates a broad mixture of complementary elements, including resistance tools, dryland strength work, drill-based training, energy-system classifications, and structured progression phases extending over several months.

As a result, the system remains partially embedded within the traditional paradigm, despite moving significantly closer to **race-specific** training principles.



Typical Structure of a Brett Hawke Sprint Program

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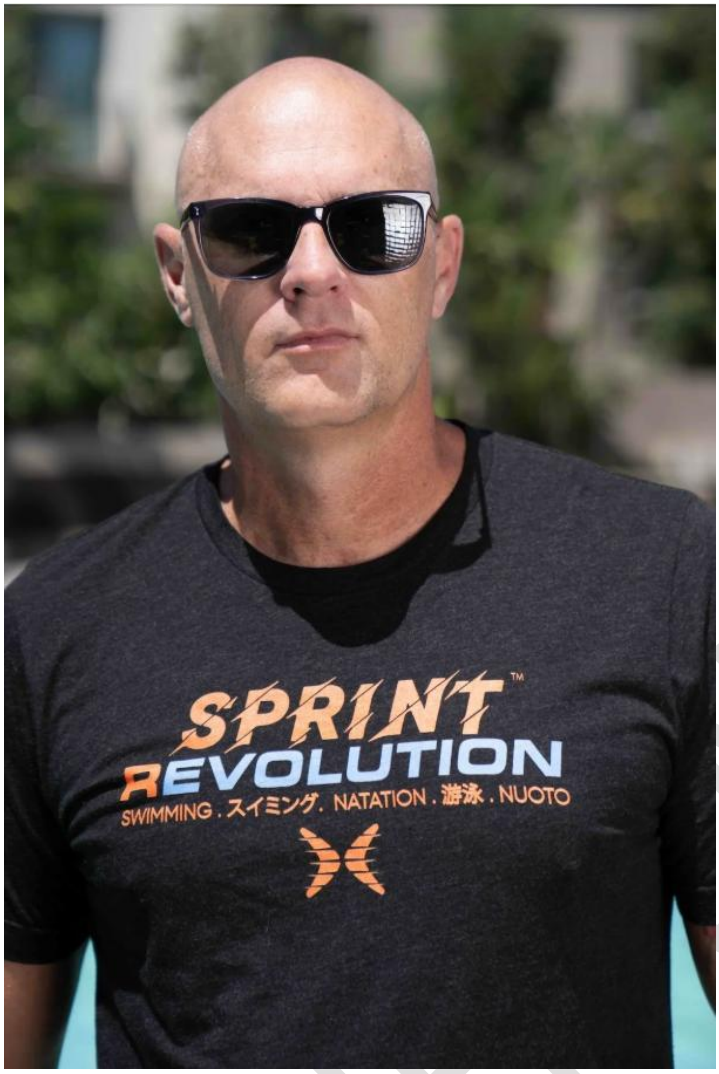

In presenting this approach, **Hawke** explicitly argues that it should be distinguished from the Ultra-Short Race Pace Training (USRPT) framework, on the basis that it incorporates a broader range of elements, including technique mastery, resistance training, racing strategies, and mental preparation.

However, three of the four elements cited as differentiating factors—technique mastery, racing strategies (i.e., race-pace execution), and psychological preparation—have long been integral components of the USRPT framework, which explicitly incorporates:

- psychology (mental preparation)
- biomechanics (technical execution)
- conditioning (race-pace execution)

as interconnected domains of performance.

USRPT may be one of the most misunderstood training methodologies in modern sport.

Even the inclusion of *resistance training*—often presented as a distinguishing feature—does not constitute a true conceptual divergence.
Rather, it reflects a difference in emphasis.

Within the USRPT framework, this training modality is not rejected outright.

In fact, **Rushall** himself published supplementary strength-oriented exercises intended to support general swimming development.

However, such methods remain subordinate to race-pace training and in-water performance due to their comparatively limited transfer to actual race execution.

Hawke's approach therefore reflects another step toward the race-pace paradigm formalized within the USRPT framework, although still combined with structural elements inherited from traditional swimming methodology.

These emerging approaches recognize the value of **race-pace** training performed through interval structures yet often remain reluctant to abandon traditional conditioning models due to the belief that **race-pace** training alone may be insufficient.

This reflects an incomplete understanding of the USRPT framework, partly because very few coaches have taken the time to study Rushall's original papers.

As a consequence, in the minds of many traditional coaches, USRPT is reduced to isolated **race-pace** sets inserted into a training model inherited from the previous century, rather than understood as a complete methodology for organizing the entire training process.

The result is that what is presented as a new system represents, in practice, another step toward the race-pace paradigm and, more specifically, toward the USRPT methodology, although presented as a distinct "revolution."

In practical terms, the positioning of "Sprint Revolution" seeks to align itself with a specific segment of the swimming population:

Particularly sprint swimmers experiencing stagnation within traditional training systems who are unfamiliar with the USRPT framework—and even less so with the little-known SPRINT-USRPT protocol discussed earlier—and therefore seek alternative solutions.

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The Active Principle

Across the approaches discussed above, **performance improvements are primarily driven by a dominant factor,** while many additional elements contribute little—or even interfere with progress.

The term "**active principle**" refers to the component that primarily drives performance, while other elements may be present but do not meaningfully contribute to the outcome.

A useful parallel that helps explain this pattern across the approaches discussed above can be found in the supplement industry.

Many commercial "multi-ingredient" pre-workout products are marketed as sophisticated performance enhancers, combining long lists of compounds presented as synergistic.

In practice, however, their primary effect is often driven by a single well-established active ingredient, typically caffeine, while the remaining components contribute little or nothing to performance, serving mainly to differentiate the product and justify a higher price.

Similarly, so-called alternative swimming models package multiple training elements into seemingly comprehensive systems.

Hybrid approaches enjoy considerable popularity within swimming culture, although they often mistake parts for wholes.

Swimming across different "energy zones" (lactate-threshold, pyramidal, polarized models, etc.), large volumes of meters performed at speeds far removed from competition pace, the use of non-specific drills, and tools such as paddles, fins, pull buoys, or kickboards…

As discussed in the section The Interference Effect: The Myth of the Complete Swimmer, scientific studies show that when different training approaches aimed at multiple objectives are combined, a potential interference effect is produced that reduces the athlete's potential capacities.

In reality, performance improvements in each event are directly related to the time and number of meters dedicated to race-pace training, the true active principle, while many of the additional surrounding components end up interfering with the specific adaptations required for each event.

Following this trend, some coaches attempt to combine isolated race-pace training elements, some derived from USRPT, with traditional zone-based models, treating them as interchangeable components or simple drills rather than understanding USRPT as a complete and fundamentally incompatible framework for organizing the entire training process.

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In doing so, they often fail to recognize that many inherited components from traditional training contribute little to performance and may even interfere with the most important factor of all: technical proficiency while swimming at race pace.

Over time, these new approaches will tend to take successive steps toward the USRPT framework, whether by explicitly acknowledging it as such or by presenting it under a different name.

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Race Pace Training Through Ultra-Short Intervals.
The Real Break from Traditional Swimming

What is often overlooked in these emerging approaches is that this “active principle” had already been clearly defined decades earlier by Brent Rushall through the concept of **Race Pace Training.**

This represented a fundamental departure from traditional swimming methodology.

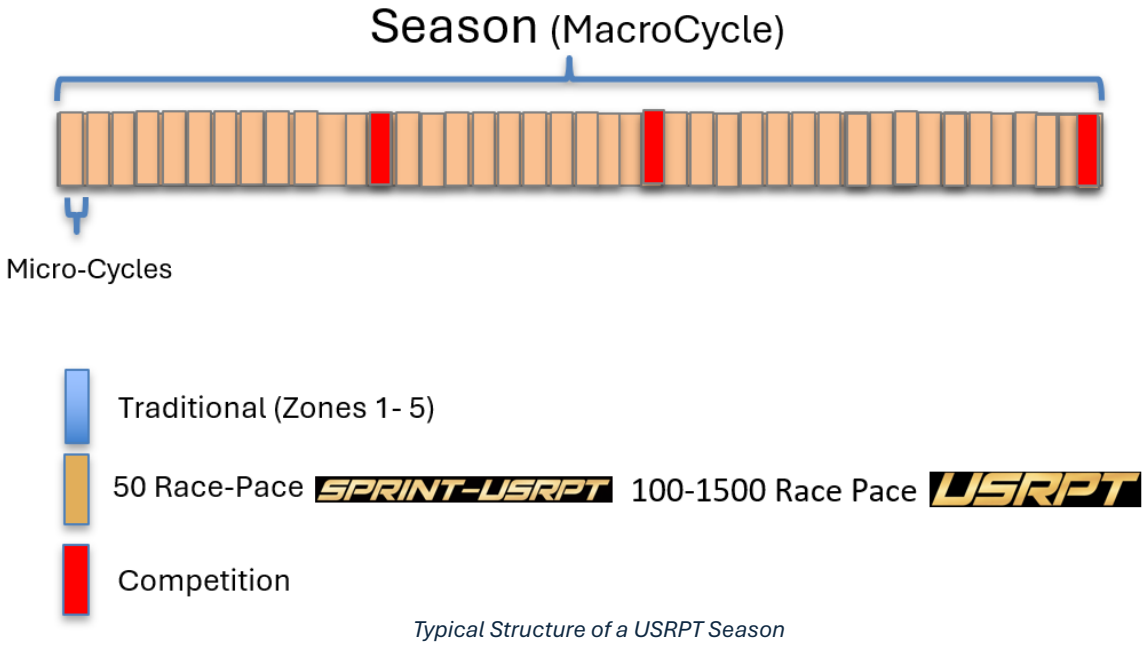
Instead of attempting to improve performance indirectly through the development of physiological capacities, **Race Pace Training** focuses on the direct rehearsal of the exact demands of the event.

But this does not require swimming full race distances in training.

Rushall introduced a methodological solution to this apparent limitation through the use of ultra-short interval sets, in which swimmers repeatedly perform race-pace efforts over very short distances.

He also introduced ultra-short rest intervals, thereby avoiding complete recovery and promoting aerobic contribution, lactate reduction, and the preservation of muscle glycogen, as discussed in the chapter *The Science Behind USRPT*.

USRPT does not use **race pace** as a simple drill or as a HIIT variation aimed at physical conditioning, a misconception that remains extremely common among coaches and even some swimming scientists. Rather, it uses race pace as part of an integrated methodology designed to develop **race-specific** technical excellence.



Typical Structure of a USRPT Season

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This approach allows for:

- precise replication of race-specific speed
- preservation of technical quality
- controlled exposure to fatigue
- and accumulation of race-relevant work without degradation of execution

In designing USRPT, **Rushall** was extremely rigorous in adhering to the fundamental scientific principles of sport previously examined in depth throughout this book: Specificity, Individualization, Progressive Overload, and Recovery.

These are also the principles toward which many of the innovative coaches discussed throughout this chapter are progressively converging.

USRPT integrates within its methodological structure all race paces required in swimming for the four strokes, freestyle, butterfly, backstroke, and breaststroke, from 50 to 1,500 yards or meters, despite the widespread belief that it is a methodology exclusively intended for short 50 and 100 events.

As we have seen previously, USRPT defines seven variables that must be programmed independently for each event, making it a far more complex model than is commonly assumed by those who have never taken the time to study it in depth.

Race Pace Training is the real game changer paradigm upon which the entire USRPT framework is built.

This represents a fundamental break from the traditional swimming model.

Performance is no longer approached indirectly through physiological conditioning, accumulated mileage, or generalized aerobic development.

The objective becomes the direct rehearsal of the precise demands of competition itself.

As coaches progressively move away from purely traditional structures and toward greater specificity, they increasingly converge, consciously or not, toward principles that **Rushall** had already formalized decades earlier.

The result is an increasingly visible phenomenon in modern swimming:

the independent rediscovery of **race-pace** principles without full application of the USRPT system from which they originated.

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Rediscovery vs. Application of Knowledge

This distinction matters.

Much of what is currently presented as innovation in competitive swimming is not genuinely new.
In many cases, it is the gradual rediscovery of principles that **Rushall** had already defined decades ago within the USRPT framework.

This explains why some modern coaches, often working independently and with very different methodological backgrounds, increasingly converge toward similar conclusions.

They reduce unnecessary volume. They increase specificity. They prioritize training at race pace. They shorten recoveries. They organize sets around sustainable technical precision rather than accumulated fatigue.

This convergence of some innovative coaches toward the principles upon which USRPT is built is significant.

It suggests that, when coaches move closer to the actual demands of racing, they tend to arrive at similar conclusions.

As some coaches began questioning certain aspects of the traditional swimming model, they started experimenting with practices that resemble elements of USRPT, even without directly adopting the system as a whole, largely because their understanding of it remains superficial.

But rediscovering isolated principles is not the same as applying the methodology from which those principles originated.

Because this evolution often occurs without a direct connection to the theoretical framework that had already provided a scientific formalization of many of these principles decades earlier, the result does not reach its full potential:

- solutions are reached indirectly
- unnecessary variables are introduced
- previously solved problems are revisited
- and time is spent resolving problems that have already been addressed

The reason is that many isolated principles are adopted without fully applying the organizational structure that gives them their true effectiveness.

USRPT is not a collection of disconnected training ideas.

It is an integrated organizational system in which every component depends on the others.

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The interval structure, recovery duration, technical demand, progression logic, failure criteria, and race-specific nature of the work operate together as a coherent whole for each and every competitive swimming event.

So, although these brave coaches and swimmers are moving the sport closer to the twenty-first century, they still remain constrained by limitations that **Rushall** had already resolved decades earlier.

Once these elements are separated from that structure and inserted into traditional models, the result is usually a hybrid approach.

Some of these hybrid models produce improvements, particularly when compared with excessively volumetric systems.

But improvement alone does not validate the model conceptually.

Many hybrid systems preserve contradictions that USRPT was specifically designed to eliminate.

They may include training at race pace while maintaining large volumes of non-specific swimming.

They may reduce mileage while continuing to organize training through traditional aerobic hierarchies.

They may adopt ultra-short intervals while still evaluating training primarily through physiological fatigue markers rather than transfer to race performance itself.

These contradictions reveal the difference between moving toward race-pace principles and fully applying the USRPT framework.

The **McEvoy** case illustrates both sides of this process.

On one hand, it demonstrates that when constraints are correctly identified, practice naturally converges toward effective, race-relevant principles.

On the other, it reveals that this convergence can occur without explicit recognition of the theoretical framework that already supports it—resulting in the rediscovery of principles that had already been established.

The process changes considerably when training is grounded in established principles:

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- progress becomes cumulative rather than repetitive
- time is not wasted rediscovering what has already been demonstrated
- existing models can be systematically refined through repeated application
- and performance development advances through continuous optimization rather than trial-and-error

This is why modern swimming increasingly reveals a paradox.

As coaches move toward greater performance specificity, they increasingly converge toward principles already articulated within USRPT.

Yet many still resist the full implications of the system because those implications challenge foundational assumptions that have dominated swimming culture for decades.

This distinction between rediscovery and systematic application has important implications for training theory.

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Implication for Training Theory

This has important implications.

The evolution observed in modern coaching—through the experimentation of coaches and swimmers—is commendable, but it does not represent the creation of new knowledge; rather, it reflects the gradual alignment of practice with principles that have already been established.

In this context, USRPT—developed and articulated by **Brent Rushall**—represents not an alternative among many, but a formalization of those principles.

More importantly, the only true conceptual break from traditional swimming had already been established through **Race Pace Training**, which redefined the objective of training as the direct rehearsal of race demands rather than the indirect development of physiological capacities.

However, directly rehearsing full race distances in training is not sustainable, as it quickly leads to excessive fatigue and degradation of technique.

Rushall addressed this problem by introducing ultra-short intervals, making it possible to accumulate full race distances at race pace through fragmented repetitions, while simultaneously preserving the technical quality specific to each stroke and race distance, together with individualized fatigue control.

This is what makes Race Pace Training not just a theoretical framework, but a fully operational solution.

The key difference lies in this:

- some approaches arrive at these principles through iterative discovery.
- others begin from them and are therefore several steps ahead.

The relevance of the cases presented in this chapter—whether in the work of **Ben Titley**, the approach of **Cameron McEvoy**, or the model proposed by **Brett Hawke**— lies not in the introduction of new ideas, but in the fact that they all point in the same direction:

What is often presented as innovation is, in many cases, the delayed recognition of principles that had already been formalized.

When training moves away from tradition and toward the actual demands of the event, it inevitably converges—intentionally or not—toward **race-specific** principles, such as those formalized within the USRPT framework.

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